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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/594,385

09/27/2006

Atsushi Ohma

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EXAMINER

KWON, ASHLEY M

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/08/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/594,385	Applicant(s) OHMA ET AL.	
	Examiner ASHLEY KWON	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-28 is/are pending in the application.
- 4a) Of the above claim(s) 17-20 and 22-28 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 16 and 21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/8/09, 8/29/07, 9/27/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Applicant's election of Species 1 and Species A (claims 15, 16 and 21) in the reply filed on 1/13/2010 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 17-20 and 22-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Species 2-7, B, and C, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 1/13/2010.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 16, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Breault (US Pat. No. 4,851,377).

Regarding claim 15, Breault discloses a fuel cell comprising: an electrolyte membrane (see col. 5, lines 18-20); and a cathode catalyst layer containing a metal catalyst, the cathode catalyst layer facing a surface of the electrolyte membrane in plural regions including a specific region in which a differential electric potential between

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the cathode catalyst layer and the electrolyte membrane during an electric power generation reaction of the fuel cell is larger than in a region other than the specific region; wherein one of an amount of the metal catalyst and a specific surface area of the metal catalyst in the cathode catalyst layer in the specific region has a larger value than in the region other than the specific region. Breault discloses that the variation in reaction rate gives rise to cost and performance problems in a fuel cell, and that the current density across a given area of the electrode is proportional to the local reaction rate (see col. 1, lines 36-39). Since the structure of the Breault's fuel cell is the same as the fuel cell claimed by applicant they would operate in a similar manner and inherently possess a specific region wherein the differential electric potential between the cathode catalyst layer and the electrolyte membrane is larger than in other regions. Breault teaches that convention fuel cells with uniform catalyst loading have reaction rates that are higher at the gas inlet side than the gas outlet side (see col. 5, lines 35-39). By teaching a fuel cell electrode with a non-uniform catalyst with an increase in catalyst loading toward the outlet side of the cell, he is able to provide the electrode with substantially uniform current density (see col. 5, lines 56-62). Furthermore, Breault teaches that the distribution of catalyst required for optimization of a particular application must be established by analysis and experimentation. Therefore it is within the ambit of one of ordinary skill in the art to experiment and optimize the distribution of catalyst.

Regarding claim 16, Breault discloses the fuel cell as defined in Claim 15, wherein the cathode catalyst layer contains catalyst particles each of which comprises a

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support (see col. 3, lines 11-12), and the metal catalyst supported on the support, and wherein an amount of the catalyst particles per unit area of the cathode catalyst layer in the specific region is set to a greater value than in the region other than the specific region (see col. 5, lines 1-17).

Regarding claim 21, Breault discloses the fuel cell as defined in Claim 15, wherein the specific region is set as a region in which a current density during the electric power generation reaction of the fuel cell is smaller than in the region other than the specific region (see col. 5, lines 35-45 and lines 56-57).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ASHLEY KWON whose telephone number is (571)270-7865. The examiner can normally be reached on Monday to Thursday 7:30 - 6 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

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you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ASHLEY KWON/
Examiner, Art Unit 1795

/PATRICK RYAN/
Supervisory Patent Examiner, Art Unit 1795